

Tree Diseases Spring and Early Summer 2014

Michelle Grabowski



UNIVERSITY OF MINNESOTA
EXTENSION

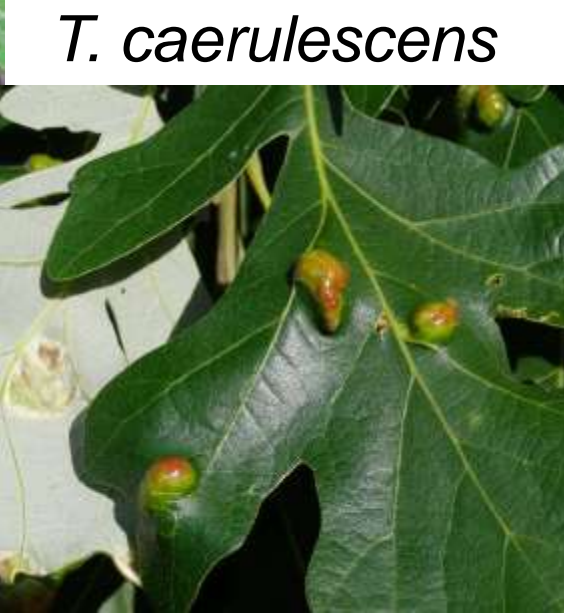
Driven to DiscoverSM

Taphrina Leaf Blister

- Infects young growing leaves and fruit in spring
- Releases phytohormones
 - Cytokinin – increased cell division
 - Auxin – increased cell growth
- Blistered leaves, witches brooms, distorted fruit



T. caerulescens





Leaf curl & witches broom
on cherry: *T. weisneri*



Plum Pockets: *T. communis*



Elm Leaf Blister
T. ulmi



Ironwood Leaf Blister:
T. australis

Taphrina Leaf Blister

- Only pathogenic in spring
- Lives as a saprophyte on twigs and buds in summer
- Survives as spores through winter
- Typically no management necessary
- Prune out witches broom and plum pockets and destroy



Yellow blister
T. populina

Fire blight – Blossom Blight and More

- Bacteria – *Erwinia amylovora*
- Infects Rosaceae: Apple, Crabapple, Mt. Ash



G. Sundin, MSU

Bacteria
overwinter
in cankers

Spread by insects & rain



In highly susceptible
varieties, infection can
spread to the stem and roots

Infect through
wounds & spread
down the shoot

Spring 2014 = blossom blight

- Temps in the 80s at blossom
- Warm and wet

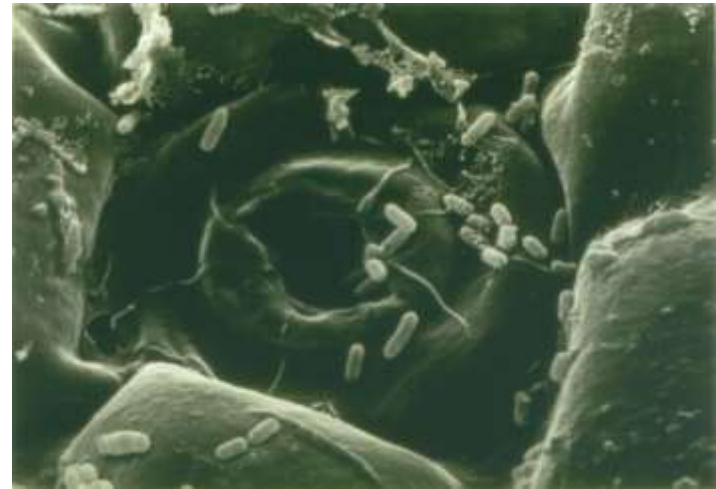


Why is fire blight difficult to control?

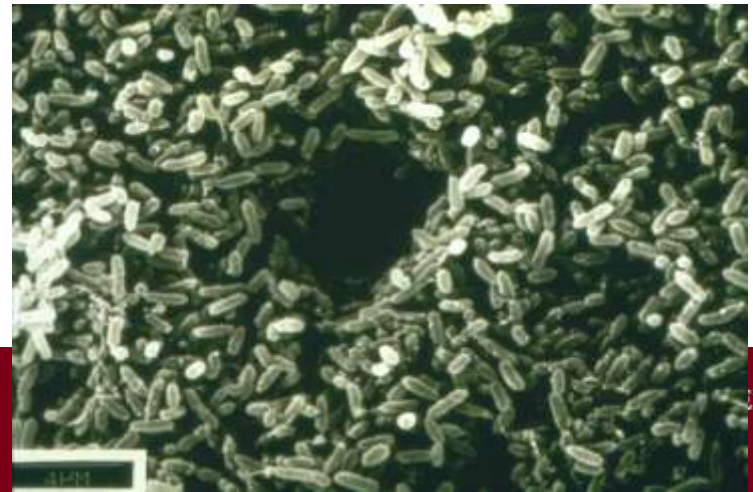


Colonizes stigma,
moves down style to
nectary and enters
nectathodes

Under ideal conditions can
double every 20 minutes!



48 hours later



Blossoms infected if warm (81F)
and wet



Fire blight 2014

- Summer 2014: Watch for shoot blight
- Prune out infected shoots 8-10 inches below infection on a cool dry day
 - Highly susceptible varieties
 - Very young trees
 - Infected water sprouts on trunk and main branches
- Sterilize pruners between cuts
- February & March 2015 – scout all Rosaceae for fire blight cankers

Elm Mosaic Virus

- Aka Cherry Leaf Roll Virus
- Transmitted by nematodes feeding on roots
- In spring virus population spikes, lots of symptoms
- By summer, virus population drops, no symptoms



Unlikely to have significant health effects

Phomopsis Spruce Decline

- Affects Colorado, Englemann, white and Norway spruce
- Starts on lower branches
- Older needles discolor, drop and leave bare branches with live buds
- Branches eventually die
- Needlecast symptoms often without needlecast fungi



Phomopsis Spruce Decline



D. Fulbright, MSU

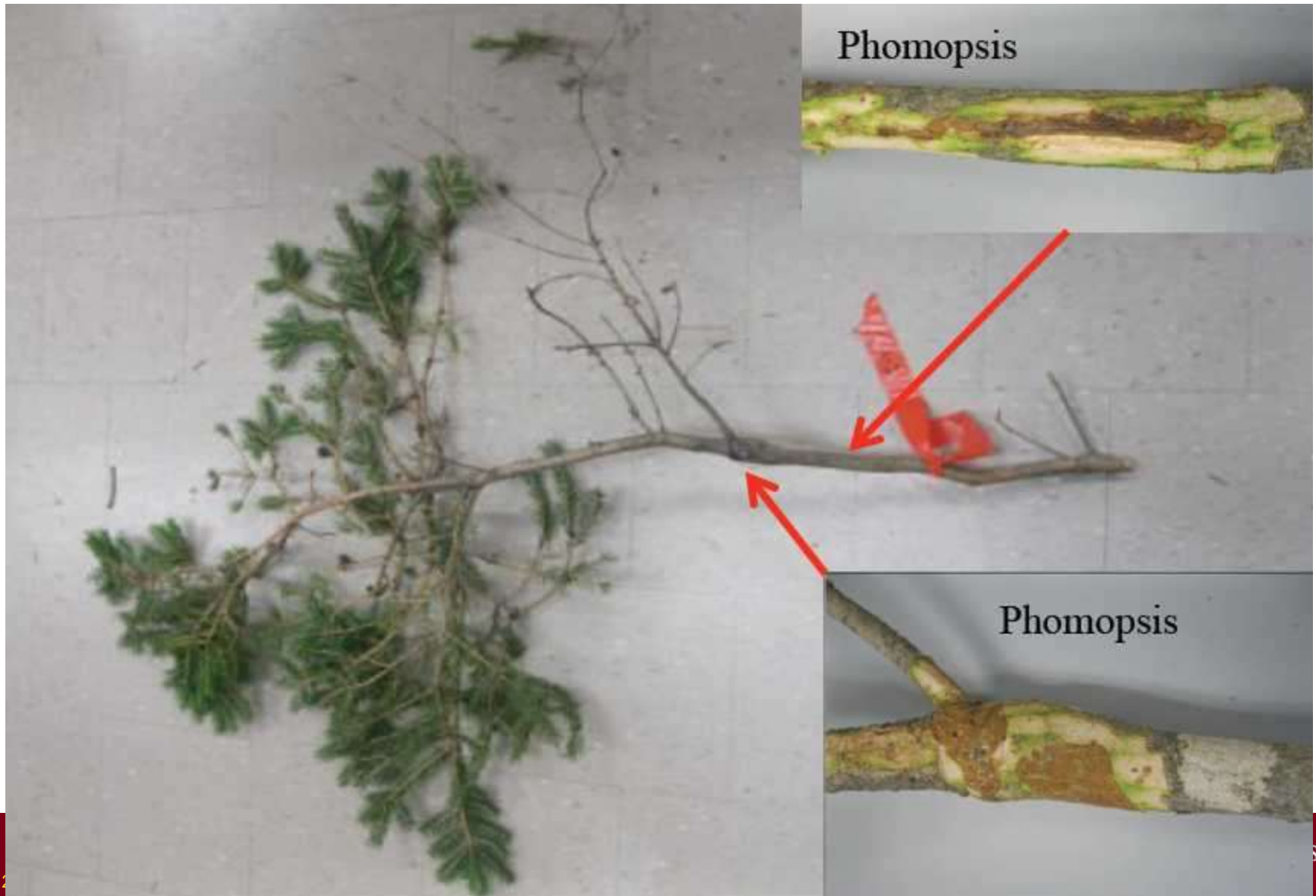
2009



D. Fulbright, MSU

2011

Phomopsis Spruce Decline



Phomopsis Spruce Decline

- *Phomopsis* sp. known to cause shoot blight in nursery plants and on Christmas tree farms
- Known to be a stress related pathogen
- Now finding *Phomopsis* sp.
 - Causing cankers
 - On mature trees in landscapes and Christmas tree farms



Phomopsis Spruce Decline in Minnesota

- Identified May 2014
- Remove bark from dead spruce branches to look for staining
- Send samples to UMN Plant Disease Clinic
<http://pdc.umn.edu>
- No management recommendations available



Thanks!

Questions?



UNIVERSITY OF MINNESOTA
EXTENSION

Driven to DiscoverSM